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2017-18
CLOUD DATA PROTECTION
APPLIANCE BUYER'S GUIDE

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The Insider's Guide to Evaluating Cloud Data Protection Appliances

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Introduction

It has finally happened. Using cloud providers as part of an overall corporate data protection strategy can now be found in all data protection appliances that integrate backup software into the appliance regardless of the size of the organization the appliance is intended to serve.

Cloud support was once primarily included as a feature in hybrid cloud backup appliances intended for use by small and midsized organizations or in the remote and branch offices of large organizations that wanted to leverage the cloud. These smaller organizations and offices often only had nominal amounts of data to protect and few or no IT staff to support their backup processes. Further, they wanted the flexibility to protect and store data locally as well as move it offsite for disaster recovery purposes. Cloud data protection appliances fit these requirements very well.

The cloud data protection appliances found in this Buyer's Guide take support for the cloud to new levels. While these appliances still give organizations the option to use the cloud as a storage target, the ways in which they can leverage the cloud have multiplied. Consider:

- *Support for multiple clouds from multiple providers.* The first generation of cloud data protection appliances primarily used the clouds associated with either the appliance vendor or the reseller. While many of today's cloud data protection appliances still support those two cloud options, most now support connectivity to public cloud storage providers such as Amazon S3, Google Cloud, and Microsoft Azure as well as OpenStack compliant clouds such as those provided by IBM SoftLayer and Rackspace.

- *Concurrent support for multiple clouds.* In addition to connecting to multiple clouds, cloud data protection appliances can store data in them concurrently. This gives organizations the flexibility to store data with the cloud providers that offer them the most advantageous pricing as well as capitalize on specific features that certain clouds may offer.

- *Disaster recovery as a service (DRaaS).* More appliances give organizations the opportunity to recover from local failures in the cloud though how they deliver this functionality varies widely. Some place their appliances at the cloud provider's site to facilitate recoveries on the cloud data protection appliance itself. Others partner with cloud providers to deliver disaster recovery services as part of a broader offering from the cloud provider to include using the cloud provider's compute, network, and storage services.

Freeing organizations to simultaneously access multiple available cloud providers and providing more features to recover with these cloud providers are just some of the ways these appliances are evolving. Organizations will also find "cloud-like" features appearing on some of these appliances. Among these features, three specific ones already appear on leading products that foreshadow what these products will collectively look like in the years to come. These features include:

1. *Scalable architectures.* Products garnering a great deal of attention and disrupting traditional solutions are those that leverage scale-out architectures. Using these architectures multiple appliances may function as a single logical instance which simplifies managing and gives organizations more flexibility to scale-up or down. They also help to mitigate if not eliminate the need to do data migrations from one generation of appliances to the next.

While scale-out products such as hyperconverged infrastructure solutions are still establishing a foothold in production environments, these solutions make a great deal of sense in less visible, secondary use cases such as data protection. These solutions give organizations more flexibility to more easily scale capacity and performance, run test and dev VMs using backup data, and perform non-disruptive software upgrades while minimizing administrative overhead.

2. *Virtual appliances.* One might expect that virtual appliances *(a virtual machine image file consisting of a pre-configured operating system and a single application)* would be widely available and adopted due to the heavily virtualized infrastructures that already exist in many organizations. These cloud-like environments make it very easy for organizations to spin up virtual appliances and mitigate the need to purchase additional hardware. However, the unique capacity, processing and/or throughput requirements of backup software as well as the use of deduplication software have slowed the adoption of virtual appliances to date.

However, as organizations accelerate their adoption of public and private cloud providers and create software-defined data centers in their environments, the demand for cloud data protection appliances to be available as virtual appliances will almost certainly increase. While some providers already ship their software as virtual appliances, expect the availability of cloud data protection virtual appliances to become more widespread and vendors to make more noise about them going forward.

3. *Intuitive management interfaces.* Enterprise products come with multiple product bells and whistles which inevitably means added management complexity as there are more knobs to turn and buttons to push. While these added features are a necessity on enterprise products, organizations loathe the idea of their IT environments becoming more complex. Rather, they want all the knobs and buttons minus the complexity.

To counter this complexity, some enterprise cloud data protection appliances present customized, personalized interfaces based upon an individual's login. Once the appliance is configured and user login templates are created, administrators get the custom views they want to more simply manage their company's environment or their portion of the company's environment.

Additionally, more products give organizations the options to create backup and recovery policies based upon business rules. This methodology frees business rules to change dynamically as the backup and recovery policies associated with them also change while giving them higher level, business views into their IT environment as opposed to the more technical views.

These features and many others are examined as part of this *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide*. This Buyer's Guide helps enterprises assess the cloud data protection appliance marketplace and determine which appliances may be the best fit for their environment. This Buyer's Guide includes data sheets for 22 cloud data protection products that achieved rankings of *Recommended* or *Excellent* after DCIG's review of dozens of appliances. These leading products are available from six vendors including Cohesity, Commvault, Quorum, Rubrik, Unitrends, and Veritas.

As in the development of all prior DCIG Buyer's Guides, DCIG's analysts have already done the heavy lifting for enterprise technology buyers by:

- Identifying a common technology need with many competing solutions but with little comparative data available to technology purchasers

- Scanning the environment to identify available products in the marketplace

- Gathering normalized data about the features each product supports

- Providing an objective, third-party evaluation of those features from an end-user perspective

- Describing key product considerations and important changes in the marketplace

- Presenting DCIG's opinions and product feature data in a way that facilitates rapid feature-based comparisons

The *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* drives time and cost out of the product selection process by enabling prospective buyers to more quickly identify a shortlist of products that meet their specific needs. Thus, prospective purchasers can focus their product evaluation energies and move more quickly to the competitive bid process.

Each DCIG Buyer's Guide provides a valuable point-in-time published snapshot of a marketplace. Since vendors continuously release new products and feature enhancements to existing products, DCIG routinely incorporates these product updates into its bodies of research that is made available through subscription to the DCIG Competitive Intelligence Portal.

Note that this Buyer's Guide is not intended to be a substitute for bringing individual products in-house for testing nor should readers assume that DCIG does any hands-on testing of these products. Many end user license agreements associated with these products prohibit the publishing of testing results without first getting vendor approval. In-house testing or proof-of-concept implementations should still be done, if possible, since each product will perform differently under different application workloads and data center environments. We hope you find that this Buyer's Guide meets its intended purpose in your environment.

Executive Summary

Solutions that combine local data storage, offsite cloud services, and integrated backup software have become the default configuration for the current generation of backup appliances. Using these appliances, enterprises can easily:

- Back up and recover on-premise applications and data

- Copy applications and data off-site to store with cloud services providers,

- Use features available on some of these appliances to instantly recover applications and/or data either in the cloud and/or on-site.

The *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* gives organizations insights into the products best positioned to deliver on these features at the enterprise level in this rapidly maturing market segment.

As recently as a few years ago support for private and/or public cloud storage providers by enterprise data protection products was still a hit-or-miss proposition. Those days are essentially over. Today's products minimally leverage cloud providers as cloud storage targets and, in many cases, use capabilities that cloud providers offer to deliver more advanced recovery options. This incorporation of cloud services has led DCIG to collectively refer to these solutions as cloud data protection appliances to better reflect the broader role they can play in enterprises.

Cloud data protection appliances continue to appeal to enterprises on multiple levels. At a most basic level, they continue to deliver on their foundation of being easy for enterprises to set up, deploy, and then manage and monitor over time. By bundling both software and hardware on an appliance and making the appliance available as a single SKU, enterprises can quickly and easily deploy it. Further, by getting both the hardware and software from the provider, the provider often assumes most if not all the responsibility for ensuring that the firmware, patches, and updates on the appliances are compatible with one another while the appliance is under maintenance.

Another major appeal of these appliances is their growing ability to do on-premise recovery. While all these appliances offer internal storage capacity to store backup data, more of these appliances make it possible to allocate some of this storage capacity to:

1. Recover data and make it available via common file shares

2. Initiate the recovery of an application on a virtual machine (VM) on the appliance before moving it back to the production host to complete the recovery

3. Run one or more applications on a VM or VMs on the appliance

The biggest appeal of these appliances may, however, be their connectivity to third party cloud providers whether these providers offer connectivity to public or private clouds. Aside from giving enterprises a simple means to incorporate the cloud into their overall data protection strategy and move backup data offsite, it provides them with a simple means to create a viable, off-site disaster recovery (DR) plan for one or more of their applications and data.

What particularly caught our eye in evaluating cloud connectivity is the diversity of cloud providers to which these appliances connect. There are the obvious public cloud providers such as Amazon S3, Google Cloud, and Microsoft Azure. But for enterprises who want features beyond just using these providers as archive or backup storage targets, the clouds natively offered by the cloud data protection providers may currently offer more value and be better supported than public cloud providers with more recognizable names.

For instance, Commvault and Unitrends, the vendors of the top ranked appliances in this Guide, each offer their own clouds to which their appliances can connect. While enterprises are under no obligation to use their respective clouds to leverage the cloud, each of their clouds offers additional value beyond what public cloud storage providers can provide.

For instance, enterprises that choose Unitrends appliances and connect to the Unitrends Cloud get the flexibility to add disaster recovery as a service (DRaaS) on a per VM instance. The larger value is its white gloves service that comes with its DRaaS offering. This personalized touch serves to expedite recoveries and provide the deeper level of expertise that is often needed at these critical times.

In addition to performing recoveries from local disasters, another big reason that enterprises are looking to the cloud to store their data is to more easily meet regulatory requirements to store data offsite. While using a cloud data protection appliance to store data with a cloud provider helps to satisfy that requirement, enterprises need to consider where these clouds providers may store the backup to include quantifying in what country the data may reside.

Addressing these challenges and opportunities is what the current generation of cloud data protection appliances address. However, selecting the right appliance from your enterprise remains a daunting task as there are dozens of appliances available on the market designed to meet these needs with varying software and hardware features.

Understanding these distinctions between appliances becomes critical. While their differences may be technical and maybe even seemingly minor on the surface, they can have a significant impact upon the success an enterprise experiences when using a cloud data protection appliance in its environment.

Through DCIG's evaluation of hundreds of product features, including their software capabilities, their support for multiple hypervisors, cloud providers, backend support, and what type of hardware each appliance offers, and comparing them to what features enterprises most need, DCIG can make recommendations as to which appliances are best positioned for enterprise use.

It is in this context that DCIG presents the *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide.* As prior DCIG Buyer's Guides have done, it puts at the fingertips of enterprises a resource that provides them with a comprehensive list of cloud data protection appliances that can assist them in this important buying decision while removing much of the mystery around how these appliances are configured and which ones are suitable for which purposes.

This *2017-18 Cloud Data Protection Appliance Buyer's Guide* accomplishes the following objectives:

- Provides an objective, third-party evaluation of products that evaluates and ranks their features from an end user's viewpoint

- Includes recommendations on how to best use this Buyer's Guide and the products contained in it

- Evaluates the features of each product based upon criteria that matter most so end users can quickly know which appliance is most appropriate for them

- Provides a standardized data sheet for each product so end users can do quick comparisons of the features supported and not supported on each product

- Gives any organization the ability to request competitive bids from different providers

How to Use this Buyer's Guide

This Buyer's Guide is intended to help users accelerate their product research and selection process—driving cost out of the research process while simultaneously increasing confidence in the results. The purpose of this Buyer's Guide is NOT intended to tell users exactly which product(s) to purchase. Rather, it is to guide them in coming up with a list of competitive products that have comparable features that meet their specific needs.

Features, as displayed on each product data sheet, represent the opinion of DCIG. DCIG encourages and strongly recommends every organization verify the functionality of the features that are of interest to them before making a buying decision. To help in that decision, this Buyer's Guide gives organizations a sense of how products compare with each other, as well as giving additional insight into what other product offerings are available on the market and the specific features they offer.

DCIG recommends that companies use this Buyer's Guide in the following seven ways:

1. *Eliminate the painstaking research normally associated with identifying a shortlist of products that meet their needs.* This Buyer's Guide evaluates 22 different products from six different vendors. Each product is ranked *Recommended* or *Excellent* based on standard deviation ranges. More than 100 different features were evaluated, so organizations only need to look at the rankings and features to come up with a shortlist for consideration.

2. *Do apples-to-apples comparisons of products from different vendors.* It behooves an organization to get competitive bids from multiple vendors. But that tactic only works well when organizations know that they are receiving competitive bids on products that are roughly comparable. Using this Buyer's Guide, organizations can do a better job of accomplishing that objective.

3. *Separate the apples from the oranges.* Just as important as doing apples-to-apples comparisons is identifying when an orange is thrown into the mix. Sometimes it is very difficult for an organization to know if it is truly getting a good deal when bids come in from vendors that include different products. Now organizations can refer to the rankings and features of each product in this guide so they can determine if they are getting comparable products

4. *Gain perspective on how products from less well-known vendors compare against established and better-known brands.* There's a built-in level of comfort when buying products from well-known vendors. There's also a built-in resistance to buying products from vendors that are perceived as unknown quantities. This Buyer's Guide helps to remove some of that apprehension about buying products from less well known vendors. Using this Buyer's Guide, organizations can see how these products stack up.

5. *Normalize complex terminology.* Every segment across industries has a proclivity to adopt acronyms and jargon that is specific to it. This Buyer's Guide sifts through the acronyms and jargon and then normalizes these terms, providing a foundation for meaningful comparisons. Definitions for these normalized terms are provided in the Glossary in this Guide.

6. *Take advantage of standardized data sheets to quickly compare products side-by-side.* Product data sheets that vendors make available are rarely laid out in the same way or contain the same information. Some vendors even have data sheet formats that vary from product to product within their own portfolio. This Buyer's Guide tackles this problem by creating a standard, easy-to-read data sheet for every product. In this way, product data sheets for individual products can be referenced and the features on them quickly compared.

7. *Help justify buying recommendations to business teams.* An overall ranking of *Recommended* or *Excellent* is included at the top of every product data sheet. This overall ranking summarizes in a single word how feature rich a product is compared to other products in the Buyer's Guide.

Disclosures

Over the last few years the general trend in the US has been for both large and boutique analyst firms to receive some or all their revenue from vendors.

DCIG is no different in this respect as it also receives payment for the different services it performs for vendors. The services that DCIG provides include blogging, battle cards, competitive advantage reports, customer validations, product reviews, executive white papers, white papers and special reports.

In the interest of transparency, a number of the vendors included in this DCIG Buyer's Guide are or have been DCIG clients. This is not to imply that their products were given preferential treatment in the Buyer's Guide. All it means is that DCIG had more knowledge of their products so that DCIG could consider their product for inclusion in this Buyer's Guide.

In that vein, there are a number of important facts to keep in mind when considering the information contained in this Buyer's Guide and its merit.

- No vendor paid DCIG any fee to research this topic or arrive at predetermined conclusions

- DCIG did not guarantee any vendor that its product would be included in this Buyer's Guide

- DCIG did not imply or guarantee that a specific product would receive a preferential ranking in this Buyer's Guide, before or after completion of research

- All research was based upon publicly available information, information provided by the vendor, and/or the expertise of those evaluating the information

- No negative inferences should be drawn against any vendor or product not covered in this Buyer's Guide

- It is a misuse of this Buyer's Guide to compare products included in it against products not included

Because of the number of features analyzed, there was no way for DCIG to accurately predict at the outset how individual products would end up ranking. DCIG wants to emphasize that no vendor was privy to how DCIG weighed individual features. In every case the vendor only found out the rankings of its product(s) after the analysis was complete.

Inclusion Criteria

The *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* was derived from DCIG's Cloud Data Protection Body of Research that examined more than 180 products that do data protection. The following criteria were used when determining whether to include a specific product in this Buyer's Guide:

- Appliance includes backup and recovery software

- Product is available as a physical appliance

- Software connects to at least one public or private cloud storage provider

- Software compresses and deduplicates data

- Software provider offers and supports the appliance

- Stores backup data on the appliance

- Sufficient information available to reach meaningful conclusions

- Product generally available by August 1, 2017

Ultimately, it is the professional judgment of the analysts working on each DCIG Buyer's Guide whether a particular model met the inclusion criteria.

The Eight-Step Process Used to Rank the Products

To rank each product included in this Buyer's Guide, DCIG went through an eight-step process to come to the most objective conclusion possible.

1. *DCIG established which features would be evaluated and which ones would not.* Prior to selecting the features which would be evaluated, DCIG quantified, then "normalized" the list of available features such that a common name for each feature was established. In cases where a feature could not be objectively defined or understood, it was excluded from consideration.

2. *The features were grouped into six (6) general categories.* The features to be evaluated were grouped into six categories: Backup and Recovery, Cloud Data Protection, Hardware, Management, and Support.

3. *DCIG developed a survey to capture the feature data and completed a survey for each vendor's product(s). DCIG then sent the survey(s) to each vendor for verification. Each vendor was invited to review their data and respond with any corrections or edits to the DCIG-completed survey(s)*. In every case, every vendor had the opportunity to review and respond to any DCIG-completed survey.

4. *DCIG identified a list of products that met the DCIG definition for an "Cloud Data Protection Appliance" based on the inclusion criteria.*

5. *DCIG weighted each feature to establish a scoring rubric.* The weighting of each feature was done by DCIG analysts. The weightings were used to reflect if a feature was supported and potentially how useful and/or important the feature was to end users.

6. ***Each product's features were scored based on information gathered in the surveys.*** Features were marked as either *"supported"* or *"unsupported/ undetermined."* Rankings were finalized after any updates from vendors had been entered and the review period expired.

7. ***Products were ranked using standard scoring techniques.*** One of the goals of this Buyer's Guide is to establish clear lines of differentiation with conclusions that are arrived at objectively. To accomplish this goal, the mean score for all products was first determined and then a standard deviation. DCIG developed an overall ranking for each product based on where that product's overall internal score fit into the various standard deviation ranges.

8. ***Product feature data review worksheets were created and sent to the vendors for review before publication.*** Each data sheet included in this published version of the Buyer's Guide is derived from a feature data review worksheet that was sent to the vendor for its review and feedback. In every case, each vendor had an opportunity to review and update the content included on its respective data sheet(s).

Due to the large number of product features that DCIG evaluated, only a subset of the collected data could be included on the data sheets. The feature data on the data sheets was selected based on the following criteria: 1) the most variability, 2) the greatest scoring weight, and 3) of the greatest interest to prospective purchasers. The full set of product feature data may be accessed in the DCIG Competitive Intelligence Portal available through DCIG's website: **portal.dcig.com**.

DCIG Thought and Comments

Recovery

The phrase "Cloud Data Protection Appliance" is included in the name of this Buyer's Guide but the focus of each appliance covered in this Guide is squarely on recovery. While successful recoveries have theoretically always been the objective of backup appliances, vendors too often only paid lip service to that ideal as most of their new product features centered on providing better means for doing backups. Recent technology advancements have flipped this premise on its head.

Multiple reasons exist as to why these appliances can focus more fully on recovery though five key enablers have emerged in the last few years. These include:

- The low price point of using disk as a backup target (as opposed to tape)

- The general availability of private and public cloud providers

- The use of deduplication to optimize storage capacity

- The widespread availability of snapshot technologies on hypervisors, operating systems, and storage arrays

- The widespread enterprise adoption of hypervisors like VMware ESX, and Microsoft Hyper-V as well as the growing adoption of container technologies such as Docker and Kubernetes.

While there are other contributing technologies, these five more so than the others give these appliances new freedom to deliver on backup's original promise: successful recoveries. By way of example:

- ***Instant application recoveries.*** Over 80 percent of the appliances that DCIG evaluated now support the instant recovery of an application on a virtual machine on the appliance. This frees enterprises to start the recovery of the application on the appliance itself before moving the application to its primary host. Enterprises can even opt to recover and run the application on the appliance for an extended time for test and development or to simply host the application until the production physical machine on which the application resides recovers.

- ***Application conversions and migrations.*** All these appliances support the backup of virtual machines and their recovery as a virtual machine, but fully 88 percent of the software on these appliances support the backup of a physical machine and its recovery to a virtual machine. This feature gives enterprises access to a tool that can use to migrate applications from physical to virtual machines as a matter of course or in the event of disasters. Further, 77 percent of them support recovery of virtual machines to ***physical machines.*** V2P is the least used recovery scenario. One use case is to move an application that is not performing well, or that is interfering with the performance of other applications, onto a dedicated physical server. This can also be useful when troubleshooting problems if a software vendor

insists the problem is somehow associated with the virtualization stack.

- *Locating and accessing backup data.* By storing data in the cloud *(even if only using it as a cloud target),* enterprises know where their backup data is located. This is not trivial. Too many enterprises do not even know exactly what physical gear they have in their data center, much less where their data is located. While many enterprises still need to concern themselves with various international regulations governing the data's physical location when storing data in the cloud, at least they know with which cloud provider they stored the data and how to access it. As anyone who uses or has used tape may recall, tracking down, lost tapes, misplaced tapes or even existing tapes can quickly become like trying to find a needle in a haystack. Even using disk is not without its challenges. Many enterprises may have to use multiple disk targets to store their backup data and trying to identify exactly which disk device holds may not be as easy as it sounds.

- *Recovering in the cloud.* Recovering in the cloud, whether it is recovering a single file, a single application, or an entire data center, may appeal to enterprises more so than any other option on these appliances. The ability to virtually create and have access to a secondary site from which they can recover data or even perform a disaster recovery and run one or more applications in the cloud removes a dark cloud of unspoken worry that hangs over many enterprises today. The fact that they can use that recovery in the cloud as a stepping stone to test hosting applications or an entire data center in the cloud lowers the risk of migrating to the cloud.

Cloud Adoption and Usage

The title of this current Buyer's Guide reflects the degree to which backup appliances have adopted the cloud. When DCIG produced its first backup appliance Buyer's Guide, only a few appliances supported using the cloud as a target. Now every backup appliance that DCIG evaluated minimally supports using the cloud as a backup target and many offer more advanced services such as recoveries in the cloud, to include recovering specific applications, application failover to the cloud and failback, and even the recovery of entire data centers in the cloud.

The level of recovery services available from the cloud provider will vary greatly. They will depend upon variables such as:

- the cloud provider selected
- the number of applications to recover
- the amount of data to recover
- the time to recover
- the complexity of the data center

While some cloud providers were able to handle some of these backup and recovery levels years ago, the number of providers that can deliver these services has increased dramatically. In addition to using more well-known cloud providers such as Amazon, Microsoft, and Google, appliance/cloud providers such as Quorum and Unitrends offer many of these cloud services through their own clouds as well as through these larger cloud providers. Yet the freedom to choose from multiple cloud providers is only part of what is driving cloud's growing adoption and usage.

Perhaps the larger drivers are the automation, best practices, and simplicity that appliance providers offer that make cloud adoption almost turnkey. Whereas enterprises once almost had to have their own team of coders and administrators to connect to the cloud and then backup and recover from it, connecting today's appliances to the cloud is often little more than a point-and-click operation.

Further, many of these providers now have internal experts as well as partners trained in the cloud. These individuals can successfully walk enterprises through the process of moving their data into the cloud and then monitoring, managing, and recovering it once it is located there. These individuals help to remove much of the uncertainty associated with using the cloud as they provide the initial services and ongoing support that enterprises need to succeed.

Yet the primary driver that motivates (or discourages) enterprises to move to the cloud is cost. On that front, cloud's costs have continued to drop. Further, as one Amazon reseller recently shared with me, the fear of lock-in with a specific cloud provider has largely been negated by two forces at work in the market.

1. *All cloud providers are constantly competing with one another to deliver lower prices.* As such, the

price you are paying today will likely only go down in the future as these providers may automatically lower your prices as the price drops *(verify this language is in any contract you sign)*.

2. ***Backup appliances connect to multiple cloud providers.*** Most cloud data protection appliances connect to multiple cloud providers which mitigates concerns about cloud vendor lock-in. In the event the cloud provider you use starts to raise prices *(or fails to lower them in lockstep with the other ones)*, moving to another cloud provider as a target to store your data and do recoveries can be orchestrated by the appliance.

Cloud-to-Cloud Backup

Cloud backup and cloud-to-cloud backup are two phrases that are commonly heard in the context of backup to the cloud. As part of DCIG's evaluation of backup appliance, DCIG does evaluate appliances on their ability to do cloud-to-cloud backup.

The phrase cloud backup refers to a backup software's ability to backup data and directly recover it from a cloud provider. This capability is found in products generally aimed at the consumer or small business market, such as Mozy or Code42 *(which are not evaluated in this Guide)*.

DCIG did not consider this cloud backup in its evaluation of cloud data protection appliances. DCIG currently holds the position that enterprises should use appliances that first store backup data on-premise, before then copying it to a cloud provider.

Cloud-to-cloud backup is a different animal. As more enterprises adopt Google G Suite, Microsoft Office 365, Microsoft Exchange and/or SharePoint Online, Salesforce, and other cloud-based software-as-a-service (SaaS) products, their employees create and store data in these applications. This creates the problem and opportunity for cloud data protection appliance vendors to solve: protecting the data that resides in this cloud-based SaaS applications.

Significant differences exist between appliances with regard to protecting SaaS application data. Of the 100+ appliances that DCIG evaluated, only 71 products supported backups of these cloud-based SaaS applications in any form. All 71 products supported Microsoft Office 365 with about 60 percent of them supporting Microsoft Exchange Online and 49 percent supporting Microsoft SharePoint

Online. The only other two cloud-based SaaS applications that were supported by any significant number of appliances were Salesforce.com (about 30 percent) and Google G Suite (about 25 percent).

Deduplication

In the last decade deduplication has become almost synonymous with backup. Deduplication is the key technology that has enabled enterprises to move from tape to disk as their primary backup target. By reducing backup data stores by anywhere from 10:1 – 20:1, it simultaneously reduced the amount of disk capacity needed to store this data. This put the cost of disk about on par with the costs of tape.

However, the increased focus that enterprises put on recovery throws a bit of a monkey wrench into many current processes for how cloud data protection appliances implement deduplication. Many deduplicate data during the backup process. This may occur on the client, on the master or media server, or on the backup target. While these approaches work well for optimizing network bandwidth, available storage capacity, and placing the workload of deduplication on the device that has the most available CPU cycles to process it, it does complicate and slow the process of recovery.

By deduplicating data as it is stored, enterprises may find themselves in a predicament where they must wait a lengthy period to recover the data. This wait stems from the need to first reconstitute the deduplicated data into its native format before it is usable. This affects and delays the ability of enterprises to use backup copies of data for other use cases such as testing, development, and rehearsing disaster recoveries.

While DCIG anticipates that the use of deduplication will continue and grow, enterprises must factor in the recovery penalty associated with using deduplication. To avoid the delays associated with reconstituting deduplicated backup data to recover applications, enterprises must either acquire more powerful *(and usually more expensive)* hardware to accelerate recoveries or they must initially store the data in its native state.

Replication

While replication may be a *"nice-to-have"* feature on backup appliances, it is a *"must-have"* on cloud data protection appliances for them to quickly and effectively move backup data into the cloud. Vendors seem to have

gotten this message loud and clear. All appliances evaluated support replication with 90 percent bundling the software license for replication as part of the appliance's base price. The remaining ten percent offer it as optional feature that enterprises can license.

The other area where these appliances share a great deal of common ground is in how they deliver replication. Every single appliance can replicate data using periodic or scheduled replication. Using this form of replication, the appliance on a regular schedule *(hourly, daily, or on some other predetermined frequency)*, takes a snapshot of the existing backup data and sends the delta or changes from the previous snapshot to the secondary location, in this case the cloud.

However, the similarities between appliances in terms of how they deliver and support replication often end there. For example, only about 75 percent of the appliances support continuous replication, offering enterprises the flexibility to replicate data immediately after the data is written at the primary location. Fewer appliances *(18 percent)* support *synchronous replication*, which guarantees that data is written to at both the primary and secondary location before the write is confirmed.

Other areas around replications that enterprises should examine is in how they may configure the hardware on the appliance to support replication. For example, 90 percent of the appliances give enterprises the flexibility to dedicate certain network ports to perform specific tasks. In this scenario, if an appliance has four network ports, administrators may want to configure two ports for ingest, one port for replication, and reserve one port for management.

Finally, enterprises will want to examine what types of replication fan-in and fan-out options the appliance supports. While all appliances support 1:1 replication between appliances, the percentage of appliances that support other configurations such as 1:N, 1:N:N, N:1, and N:N varies widely.

1:1	████████████████	100%
1:N	███████████	70.06%
1:N:N	██████	41.81%
N:1	█████████████	76.27%
N:N	█████	36.72%

Virtual Appliances

The title of this Buyer's Guide may well become the DCIG Virtual Backup Appliance Buyer's Guide in the future. While it is impossible to say exactly when or if virtual appliances will ever become the predominant manner that enterprises deploy these appliances, a move toward software-defined data centers is clearly under way. That change creates a need to virtualize all data center appliances to include cloud data protection appliances.

Virtual appliances provide organizations a simple, cost-effective means to deploy appliances in their virtualized data centers and/or with their cloud provider. To provide a virtual appliance, vendors create a virtual machine (VM) image file that consists of an operating system and the backup software. This virtual appliance then only needs to be installed on an existing hypervisor in the environment and activated.

While using virtual appliances sound appealing, physical cloud data protection appliances have specific capacity and processing needs that may outstrip the capacity, durability, network bandwidth, and processing capabilities of the virtual infrastructure on which they are deployed. Backup data, even when it is deduplicated, can still consume a large amount of physical capacity. Satisfying these capacity requirements alone may make it most cost and management effective to deploy a dedicated physical appliance to host the backup data.

Enterprises must also consider the processing and durability requirements associated with data deduplication. Deduplicating backup data at scale requires a tremendous amount of processing power. To run a virtual appliance alongside production applications on a hypervisor may result in the backup appliance either "stealing" CPU cycles from production applications that need them, slow backups waiting for the deduplication to complete, or some combination of both. Further, due to the large amounts of reads and writes from the solid state drives (SSDs) used to store the deduplication metadata database, enterprises may encounter SSD durability issues.

Finally, if the virtual appliance must accept backup jobs from other hypervisors or physical machines, the physical host or cluster on which the virtual appliance resides must ingest backup data over existing network interfaces. Here again, ingesting these backup streams may negatively impact production workloads and/or backup jobs.

These concerns should prompt enterprises to exercise caution in deploying virtual appliances. For now, enterprises should only deploy virtual appliances if they have advanced monitoring and management tools in place and individuals skilled in using them. Alternatively, they may want to use virtual appliances in small environments such as remote or branch offices where they know the production workloads are relatively light and/or predictable and will not be adversely impacted by any backup activities occurring on the virtual appliance. Virtual appliances have additional benefits for remote or branch offices, including:

- enabling rapid backup and recovery of local data

- minimizing competition with production workloads for WAN bandwidth through off-hours scheduling of replication and deduplication of the data before sending it across the WAN

- providing a local cache of frequently used files

- enabling a common managed data protection strategy across the enterprise

Ransomware

It is almost impossible to have any type of conversation around data protection without the topic of ransomware coming up. In that context, it can be said with some level of certainly that any properly configured cloud data protection appliance provides some level of protection again ransomware though the ability of each one to do so varies.

Adding to the complexity, ransomware is rapidly evolving. For instance, at least one iteration of ransomware corrupts/infects older backups that reside on disk. In this variation, even retaining older copies of backups may not guarantee a good restore since the ransomware may infect those backups as well.

Due to these constant changes in how ransomware attacks data and finds its way inside enterprises, there is probably no surefire method to ensure one is never attacked or infected by ransomware. However, many cloud data protection appliances offer features that mitigate ransomware's harmful impact.

One defense against ransomware is to keep some backup copies of data on removable media, such as tape, removable HDDs, or even optical media. As ransomware primarily corrupts data residing on accessible drives (network files shares, local HDDs, etc.), making the data more difficult to

access and modify by storing it on this type of media can help enterprises recover. The ability to store data on removable media, especially tape media, is noteworthy since some of the products from newcomers in the cloud data protection space have limited or even no support for tape or tape libraries.

Another feature to look at is the type of operating system that is used by cloud data protection appliance. While having backups is great, it may be difficult to perform a recovery if the cloud data protection appliance itself is infected with ransomware. As many ransomware attacks target Windows-based machines, those appliances that use other operating systems, say Linux, may provide a better first line of defense against ransomware than those that use Windows.

A third feature area to examine is automated ransomware detection and data recovery. By periodically scanning existing backups for data consistency and, when appropriate, automatically recovering files and/or applications to verify the integrity of the data, enterprises can take steps to proactively detect occurrences of ransomware before it holds the enterprise hostage.

Next-Gen Feature Functionality

As much as everyone cares about the features that today's appliances offer, an awareness of larger data center trends and their likely impact on data protection should inform current purchase decisions. Here are some of the key technologies that enterprises should keep an eye on in the coming months and years as they are sure to influence the capabilities of the next generation of cloud data protection appliances.

- *Containers.* Docker and Kubernetes are already changing the game in how enterprises test and develop applications and are sure to find their way into more production environments. However, the freedom for developers to spin up and shut down containers also makes them more difficult for data protection software to detect and protect before the containers and the data in them appear and disappear. Products offering instant recovery on the appliance will need to add container support. Look for advances in data protection software to address these challenges.

- *Hyper-converged Infrastructure: Protection.* Hyper-converged infrastructure appliances from the likes

of Nutanix, HPE: Simplivity, Pivot3, and, most recently with the Cisco acquisition of Springpath, have become the rage and are rapidly gaining corporate acceptance. However, bringing the protection of the data and VMs on these solutions under the control of enterprise cloud data protection product, especially with many of these hyper-converged solutions offering their own data protection features, creates their own set of challenges. Look for new integrations and features in current products to address these challenges in the months and years to come.

- *Hyper-converged Infrastructure: Architectures.* While protecting hyper-converged infrastructure solutions presents challenges, using the underlying scale-out architecture of these solutions is very appealing to deliver a scalable, easy-to-manage cloud data protection appliance. Already we see this solution available from providers such as Cohesity and Rubrik who make their first appearance in this Buyer's Guide Edition. Look for other providers to begin to offer similar architectures to compete with these two newcomers to enterprise data protection.

- *Simplified and Self-service Management Consoles.* Cheaper, faster, and easier with more features is the mantra for everything in technology and cloud data protection is not exempt from these end-user demands. To meet these demands, more cloud data protection appliances offer more intuitive GUIs that present interfaces and features customized to the user login and their prior activity in the management console. Further, some products give enterprises the option to create backup policies using business language such as "backup all servers in the Accounting group to the Accounting cloud account: as opposed to using technical terms such as "backup SrvACC001 to // networkshare/Accounting/backup001".

Performance and Pricing

Two factors that strongly influence buying decisions are performance and cost. However, this Buyer's Guide contains neither performance benchmarks nor pricing information. There are two core reasons why performance and pricing information are not included.

First, performance results vary according to data center environments, the data being stored, and implementation decisions. Introducing any type of performance metric would only result in the analysis in this Buyer's Guide becoming more subjective, not less.

Second, this Buyer's Guide is intended to provide a point-in-time snapshot of this marketplace. If DCIG had tried to test and establish performance benchmarks for all these products, the next generation of appliances could well be available before the testing was completed, making this Buyer's Guide obsolete before it ever saw the light of day.

As for pricing, many factors influence final price including capacity purchased, services, software licensing, extended warranties, negotiations, etc. These factors differ for every vendor and for every enterprise.

DCIG recognizes that price and performance are relevant and often key considerations. However, it is almost impossible for a third party like DCIG to obtain objective and accurate measures of these factors on a large scale. Therefore, evaluating performance and price is a part of the buying process that is best left to enterprises to perform and gather.

General Observations

General observations on products covered in the *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide* include the following:

- Support concurrent backups and restores

- Support restoration of data from backups that have been replicated to a second location

- Recover an individual file from the cloud without downloading the entire VMDK

- Support WAN acceleration to the cloud storage provide

- Set data retention periods be set differently for replicated vs. original data

- Present storage to a hypervisor to allow a VM to be recovered without copying data back to production storage

- Support application consistent backups of Exchange and SharePoint applications

- Support application consistent backups of Oracle and SQL Server databases

- Support advanced at rest and in-flight encryption

- Support select specific files or folders for backup while excluding others

- Network ports configuration by task such as management, replication or ingest

- Provide some metering capabilities

- Support performance monitoring

- Trending showing if a client or VM is backing up more data over time

- Generate alerts when specified performance thresholds are breached

Recommended Ranking

Eleven appliances from Commvault and Unitrends earned the top ranking of *Recommended* in the *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide.* These products share the following characteristics:

- Appliances scale to offer high levels of cache, processing power and storage capacity

- Offer connectivity to multiple cloud providers

- All these products support adaptive bandwidth throttling based on consumed WAN bandwidth (as compared to products ranked as *Excellent* where only 60% supported this feature)

- Support VADP and vCenter for instant recovery

- Support protection for VMs residing multiple hypervisors

- They can convert backups of physical machines to virtual machines

- Can cluster multiple appliances together to create a highly available configuration

- They support P2P, P2V, V2P, and V2V restores

- They offer advanced managed management capabilities such as auto-tiering and metering

Commvault

On the hardware side, Commvault is still relatively new to the cloud data protection appliance market having only brought its own appliances to market a few years ago. CommVault's appliance lineup consists of three appliances: the A210, A410 and A600. All three models support SSDs though the A210 and A410 models both ship with fixed amounts of usable storage capacity while the A600 starts

at 18TB of usable capacity and can scale up to 288TB. Enterprises may also combine four of the A600 nodes to scale to over a petabyte of usable capacity in a single logical configuration.

Commvault's software side is a very different story as it has offered backup software for well over a decade. During that time, it has matured its software to protect all leading operating systems (Linux, Windows, and UNIX), databases (DB2, Oracle, and SQL Server) and hypervisors (Microsoft Hyper-V, Linux KVM, and VMware ESX.)

In its most recent software release, Commvault took steps to improve the manageability of its product. More features generally equate to greater management complexity. In attempt to offset this, Commvault gives users the option to create customized interfaces. Similar to websites such as Facebook and Yahoo that give their users the flexibility to set preferences as to which features appear on their home page, Commvault gives users the option to create customized views that display the specific settings and reports that they want to view when they login.

In recent years, Commvault has made connectivity to multiple clouds a priority in its software and the results in this Buyer's Guide reflect its prowess in this area. Commvault gives enterprises the flexibility to choose from many cloud providers. These include more well-known public cloud providers such as Amazon S3, Microsoft Azure, and Google Cloud, as well as lesser known cloud providers. The flexibility that Commvault offers to choose from among multiple cloud provider mitigates concerns about vendor lock-in while simultaneously giving enterprises new freedom to select and optimize where they can store data and recover applications.

Commvault's embrace of the cloud has not deterred it from delivering on key technical features that ensure enterprises can successfully continue to protect their infrastructure even as they adopt the cloud. For example, Commvault provides multiple ways for enterprises to perform deduplication by giving them the option to deduplicate data at the client or source; on the media and/or master server; and even it can even deduplicate data after it has backed it up.

Commvault also includes a full complement of options to replicate data. Enterprises may leverage it to perform either asynchronous or synchronous replication. They may also

replicate data across multiple hops as well as configure two or more appliances to replicate data in either direction (referred to as N:N replication.) This comprehensive mix of deduplication and replication features mitigates the need for enterprises to acquire other products to perform these tasks.

Unitrends

One of the first vendors to offer backup appliances, Unitrends has continued to expand the capabilities of its appliances to better align with enterprise requirements for all aspects of data protection. All eight of its 800S and 900S models reflect these efforts with each of them earning a *Recommended* ranking.

On the hardware side, these models distinguish themselves by supporting large numbers of processor cores (up to 16), Ethernet ports (up to eight 1Gb ports and two 10Gb ports), cache (up to 256GB), and storage capacity (up to 180TB on the 946S model.) This breadth and depth of hardware features coupled with the numerous models available from Unitrends that specifically target enterprise data protection workloads help to set Unitrends apart from its competitors when enterprises want to select an appliance appropriately configured for their environment.

On the software side, Unitrends has continued to expand the number of cloud providers that it supports. However, some of its most notable improvements are the steps that Unitrends has taken with its own cloud offering to enable enterprises to leverage the cloud more effectively for disaster recoveries. Using its optional disaster recovery as a service (DRaaS), enterprise can configure VMs to operate in a standby mode in the Unitrends Cloud. They can use these VMs operating in the cloud to perform recoveries in the cloud should their primary site go down. While many cloud data protection appliances use the cloud as a backup target, Unitrends is one of the few solutions from which enterprises can choose that can function as a single solution to perform recoveries either locally or in the cloud.

Unitrends distinguishes itself from other cloud data protection appliances in subtle but important ways. For instance, Unitrends has taken steps to simplify management in enterprise environments. To accomplish this, Unitrends grants organizations the ability to create backup and recovery policies using business language. For instance, Unitrends can create an Engineering group that has specific backup

policies assigned to it. Then as new servers (physical or virtual) come online, they can place the servers in that group and they automatically inherit those backup policies.

This greater awareness of the business environment also gives Unitrends administrators a better understanding of when to run backup and recovery jobs in today's 24x7x365 world. While many of these jobs still may need to run in the typical 10 pm to 6 am backup window, administrators may have greater flexibility to run backup and recovery jobs during the day during periods of slow or no application activity since they know from the business-based language backup policies which departments use these applications and when they use them.

Finally, Unitrends has completed the integration of the management of the various software products it has acquired over the years. Enterprises using its software can more easily manage cloud backups, physical and virtual machine backups, and recoveries to and from the cloud from one common interface across multiple appliances.

Excellent Ranking

DCIG ranked eleven appliances from Cohesity, Quorum, Rubrik, Unitrends, and Veritas as *"Excellent"* in its 2017-18 Cloud Data Protection Appliance Buyer's Guide. These eleven appliances generally shared the following characteristics:

- Store data with multiple cloud storage providers
- 70% support all four of the following restore types: P2P, P2V, V2P, and V2V
- Integrate with vCenter for instant recovery
- 90% integrate with VMware vCenter Server for monitoring and management tasks
- Nearly all can include or exclude VMs for backup based on search criteria
- 90% can create an export of its backup metadata database to a different location
- Most can set policy-based configurations on a per-container basis in VMware
- Support the IPMI protocol

- Most also support the NDMP backup protocol

- 90% connect to public storage clouds (as opposed to just their own clouds)

- The majority protect VMs across multiple hypervisors (Microsoft Hyper-V, Linux KVM, and/or VMware ESX)

Cohesity

Cohesity is one of two providers with products that represents the next generation of cloud data protection appliances. Cohesity's products differ as they use a hyper-converged architecture that scales out using individual, self-contained nodes. Each of the nodes in its solution introduces additional capacity, computing, memory, and networking ports that together function as one logical entity.

The power of this architecture lies in the flexibility it gives enterprises to introduce one or more nodes as needed when they require additional resources to protect their environment. These new nodes may be added to existing Cohesity deployments without needing to replacing existing nodes. Further, should existing nodes need to be replaced due to offering insufficient capacity, compute, or simply being at end of life, its hyper-converged architecture facilities the migration of data from one node to another.

Perhaps the greatest advantage of the hyper-converged architecture used by Cohesity's product is that it possesses "cloud-like" qualities. In other words, organizations get the benefits of data protection without the headaches of data migrations and capacity and processing limitations that other architectures possess.

The various appliances that make up the Cohesity C2000 Series of products, the C2100, C2300, and C2500, exemplify the cloud-like capabilities of its underlying hyper-converged architecture. Any of these nodes can be logically grouped together to provide high availability by replicating data locally or between remote sites. Cohesity can also replicate data to certain public cloud providers such as Amazon, Google, and Microsoft using its DataPlatform Virtual Edition.

Perhaps the largest obstacle that Cohesity currently encounters on its way to gaining broader enterprise adoption of its product is the breadth of support by its data protection software. While well positioned to protect Windows, Linux, and VMware environments and even function as a backup target for other backup software products, it still lacks the ability to natively protect legacy i-Series and UNIX systems.

However, with more enterprises trending towards primarily using Windows, Linux, VMware and/or other hypervisors, its lack of native support for these legacy operating systems may become less of an issue over time.

Quorum

Quorum's cloud data protection appliances are available as both physical and virtual appliances. Where its onQ-POD appliance differs is that unlike the other solutions in this Buyer's Guide, it relies solely upon Quorum's own cloud backup service to provide third party cloud services.

Quorum makes up for its lack of choice in third party cloud providers with its feature functionality. Its onQ software is available on both physical and virtual appliances. This gives organizations the flexibility to create highly available configurations to perform instant recoveries in the cloud.

The best use case for the Quorom onQ-POD appliance is in those organizations that need a solution that delivers high availability and disaster recovery as a service as part of the appliance's core feature set. The upside of this type of sole sourced configuration is that Quorum has a great deal of control and visibility into the complete solution to better deliver on the promised solution. If organizations look to go do this path, they need to be both comfortable and confident in Quorum that it can deliver on these capabilities and scale to the level that the enterprise may need.

Rubrik

Rubrik is the other provider whose product architecture represents the next generation of cloud data protection appliances. Due to the similar approach in architectural design, the Rubrik r348 and Cohesity C-series of appliances bear striking resemblances to one another in terms of their feature sets, enterprise appeal, and current product limitations. Any organization looking to adopt this type of architecture as their preferred data protection platform should be sure to minimally examine products from both Cohesity and Rubrik.

Unitrends

The four Unitrends 600 series products ranked as *Excellent* have the same software features as their counterparts ranked as *Recommended*. The primary differences between the Unitrends products ranked as *Excellent* and *Recommended* are the hardware features on the 600 series products are more appropriately configured for smaller workloads.

Veritas

The Veritas NetBackup appliances come in two form factors, the 5240 and 5330 Appliance models, with the 5330 Appliance targeted at larger enterprises and data centers. Both appliances ship with the latest Netbackup 8.x software release that provides the robust set of data protection features that enterprises expect and demand.

However, Veritas' focus since it was purchased by the Carlyle Group in the second half of 2015 has been on providing enterprises with increased visibility into their data and to improve their data management capabilities. Thanks to NetBackup's large enterprise install base and the amount of data it has protected in these environments, NetBackup has high levels of visibility into the types of data that enterprises store, where it is stored, who accesses it, how often they access it, and many other data points.

Further, DCIG visited Veritas' product managers and architects in Veritas' Roseville, MN, offices in late 2016. During that visit, we definitely picked up on a renewed sense of purpose and energy on the team now that Veritas is back on its own again independent of Symantec. Ideally, this should release some of the creative energy that seemed to be restrained during its time with Symantec and allow it to close some of the gaps in feature functionality that appeared.

For example, NetBackup does support well-known cloud providers to include Amazon S3, Google Cloud Storage, and Microsoft Azure, hence its inclusion in this Guide. However, its breadth of support for other cloud providers does lack when compared to the products that this Buyer's Guide ranks as *Recommended*.

Analysts' note: Features included in NetBackup 8.1 are not reflected in this Buyer's Guide. v8.1 was announced after DCIG was preparing to release this Guide.

CLOUD DATA PROTECTION APPLIANCE RANKINGS

OVERALL RANKINGS

RANKING	PRODUCT
RECOMMENDED	Unitrends Recovery 946S*
	Unitrends Recovery 944S*
	Unitrends Recovery 938S*
	Unitrends Recovery 928S*
	Unitrends Recovery 926S*
	Unitrends Recovery 824S*
	Unitrends Recovery 818S*
	Unitrends Recovery 814S*
	Commvault A600
	Commvault A410
	Commvault A210
EXCELLENT	Unitrends Recovery 608*
	Unitrends Recovery 606*
	Unitrends Recovery 604*
	Unitrends Recovery 602*
	Cohesity C2500
	Cohesity C2300
	Cohesity C2100
	Quorum onQ-POD
	Rubrik r348
	Veritas NetBackup 5330
	Veritas NetBackup 5240

* Vendor licensing Buyer's Guide listed first

CLOUD DATA PROTECTION INFRASTRUCTURE PRODUCTS

Cohesity C2100

OVERALL RANK   EXCELLENT

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	●
Differing Data Retention Policies	✓
Double-blind Encryption	●
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	●
Hypervisors Hosted *TOTAL #*	●
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	5
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 8 / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Cache *MAX*	3,840 GB *
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	24 TB
Raw Storage *MAX*	360 TB *
SSD Storage *MAX*	48 TB *

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	1
Concurrent Backup Streams *MAX*	200*
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	●
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	●
Limit Number of Backup Streams	✓
Restore Types	V2V
System Recovery Types *TOTAL #*	1

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	4
Multi-tenancy Isolation	●
Native Metering *TOTAL #*	1
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	●

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

*No theoretical limit to the number of nodes.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Cohesity C2300

OVERALL RANK **EXCELLENT**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	●
Differing Data Retention Policies	✓
Double-blind Encryption	●
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	●
Hypervisors Hosted *TOTAL #*	●
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	5
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 8 / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Cache *MAX*	3,840 GB *
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	48 TB
Raw Storage *MAX*	720 TB *
SSD Storage *MAX*	48 TB *

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	1
Concurrent Backup Streams *MAX*	800 *
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	●
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	●
Limit Number of Backup Streams	✓
Restore Types	V2V
System Recovery Types *TOTAL #*	1

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	4
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	1
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	●

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

*No theoretical limit to the number of nodes.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

DCIG

Cohesity C2500

OVERALL RANK **EXCELLENT**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	●
Differing Data Retention Policies	✓
Double-blind Encryption	●
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	●
Hypervisors Hosted *TOTAL #*	●
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	5
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 8 / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Cache *MAX*	3,840 GB *
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	96 TB
Raw Storage *MAX*	1,440 TB *
SSD Storage *MAX*	96 TB *

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	1
Concurrent Backup Streams *MAX*	800 *
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	●
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	●
Limit Number of Backup Streams	✓
Restore Types	V2V
System Recovery Types *TOTAL #*	1

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	4
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	1
Network Authentication	LDAP | AD
Performance Threshold	✓
Server Prioritization	●

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

*No theoretical limit to the number of nodes.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

DCIG

Commvault A210

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	5
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	5
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	5
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	14
Replication Types *TOTAL #*	3
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	6
Virtual Appliance	●
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	● / 2 / ●
Cache *MAX*	128 GB
Controller Configurations *TOTAL #*	3
Raw Storage *MIN*	21 TB
Raw Storage *MAX*	84 TB
SSD Storage *MAX*	960 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	5
Concurrent Backup Streams *MAX*	300
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	●
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	2
Mgmt. Interfaces *TOTAL #*	11
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	5
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	3 Years

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

Commvault A410

OVERALL RANK   RECOMMENDED

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	5
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	5
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	5
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	14
Replication Types *TOTAL #*	3
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	6
Virtual Appliance	●
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	● / 2 / ●
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	3
Raw Storage *MIN*	42 TB
Raw Storage *MAX*	168 TB
SSD Storage *MAX*	1,920 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	5
Concurrent Backup Streams *MAX*	300
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	●
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	2
Mgmt. Interfaces *TOTAL #*	11
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	5
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	3 Years

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Commvault A600

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	5
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	5
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	5
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	14
Replication Types *TOTAL #*	3
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	6
Virtual Appliance	●
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	● / 2 / ●
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	3
Raw Storage *MIN*	24 TB
Raw Storage *MAX*	1,536 TB
SSD Storage *MAX*	3,360 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	5
Concurrent Backup Streams *MAX*	300
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	●
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	2
Mgmt. Interfaces *TOTAL #*	11
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	5
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	3 Years

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Quorum onQ-POD

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	●
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	2
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	●
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	2
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	1
Replication Types *TOTAL #*	1
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	●
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 4 / ●
4/8/16Gb FC Interfaces *MAX*	2 / 2 / 2
Cache *MAX*	2,048 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	400 TB
Raw Storage *MAX*	400 TB
SSD Storage *MAX*	400 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	3
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	2
Dedupe Methods *TOTAL #*	1
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	3
Mgmt. Interfaces *TOTAL #*	5
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	2
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	3 Years

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Rubrik r348

OVERALL RANK **EXCELLENT**

CLOUD DATA PROTECTION

Bandwidth Throttling	✔
Cloud-based SaaS App Protection *TOTAL #*	●
Differing Data Retention Policies	✔
Double-blind Encryption	●
Encryption Types *TOTAL #*	2
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	●
Host App on VM	✔
Hypervisors Hosted *TOTAL #*	1
Native WAN Acceleration	✔
Policy-based Auto-tiering	●
Public Cloud Storage Targets *TOTAL #*	2
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	6
Virtual Appliance	✔
VM Instant Recovery	✔

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	12 / 8 / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Cache *MAX*	2,560 GB *
Controller Configurations *TOTAL #*	1
Raw Storage *MIN*	96 TB
Raw Storage *MAX*	960 TB *
SSD Storage *MAX*	160 TB *

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	●
Concurrent Backup Streams *MAX*	480 *
Concurrent Backup/Replication	✔
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	●
Limit Number of Backup Streams	✔
Restore Types	P2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✔
Internal Storage Capacity Alerting	✔
Mgmt. Consoles *TOTAL #*	2
Mgmt. Interfaces *TOTAL #*	2
Multi-tenancy Isolation	●
Native Metering *TOTAL #*	2
Network Authentication	LDAP	AD
Performance Threshold	✔
Server Prioritization	●

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	1 Year

NO FEEDBACK WAS RECEIVED FROM THE PROVIDER. ALL INFORMATION WAS SOLELY SOURCED BY DCIG.
The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

*No theoretical limit to the number of nodes.

✔ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 602

OVERALL RANK   EXCELLENT

CLOUD DATA PROTECTION

Bandwidth Throttling	✅
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✅
Double-blind Encryption	✅
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✅
Host App on VM	✅
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✅
Policy-based Auto-tiering	✅
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✅
VM Instant Recovery	✅

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	1 / 🔵 / 🔵
4/8/16Gb FC Interfaces *MAX*	🔵 / 🔵 / 🔵
Cache *MAX*	8 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	2 TB
Raw Storage *MAX*	2 TB
SSD Storage *MAX*	🔵

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	4
Concurrent Backup/Replication	✅
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✅
Limit Number of Backup Streams	✅
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✅
Internal Storage Capacity Alerting	✅
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✅
Native Metering *TOTAL #*	3
Network Authentication	LDAP | AD
Performance Threshold	✅
Server Prioritization	🔵

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✅ **SUPPORTED**   🔵 **UNDETERMINED / UNSUPPORTED**

Unitrends Recovery 604

OVERALL RANK **EXCELLENT**

CLOUD DATA 2017-18 DCIG BUYER'S GUIDE PROTECTION APPLIANCE

CLOUD DATA PROTECTION

Bandwidth Throttling	✅
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✅
Double-blind Encryption	✅
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✅
Host App on VM	✅
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✅
Policy-based Auto-tiering	✅
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✅
VM Instant Recovery	✅

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	1 / 🔵 / 🔵
4/8/16Gb FC Interfaces *MAX*	🔵 / 🔵 / 🔵
Cache *MAX*	8 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	4 TB
Raw Storage *MAX*	4 TB
SSD Storage *MAX*	🔵

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	4
Concurrent Backup/Replication	✅
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✅
Limit Number of Backup Streams	✅
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✅
Internal Storage Capacity Alerting	✅
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✅
Native Metering *TOTAL #*	3
Network Authentication	LDAP | AD
Performance Threshold	✅
Server Prioritization	✅

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✅ SUPPORTED 🔵 UNDETERMINED / UNSUPPORTED

DCIG

Unitrends Recovery 606

OVERALL RANK **EXCELLENT**

CLOUD DATA 2017-18 DCIG BUYER'S GUIDE PROTECTION APPLIANCE

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	1 / ● / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Cache *MAX*	16 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	6 TB
Raw Storage *MAX*	6 TB
SSD Storage *MAX*	●

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	4
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 608

OVERALL RANK **EXCELLENT**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	1 / ● / ●
4/8/16Gb FC Interfaces *MAX*	● / ● / ●
Cache *MAX*	16 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	8 TB
Raw Storage *MAX*	8 TB
SSD Storage *MAX*	●

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	4
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 814S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	16 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	12 TB
SSD Storage *MAX*	128 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	16
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 818S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	32 GB
Controller Configurations *TOTAL #*	5 2
Raw Storage *MIN*	16 TB
Raw Storage *MAX*	16 TB
SSD Storage *MAX*	128 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP | AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 824S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	64 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	24 TB
Raw Storage *MAX*	24 TB
SSD Storage *MAX*	128 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ **SUPPORTED**   ● **UNDETERMINED / UNSUPPORTED**

Unitrends Recovery 926S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✔
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✔
Double-blind Encryption	✔
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✔
Host App on VM	✔
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✔
Policy-based Auto-tiering	✔
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✔
VM Instant Recovery	✔

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	128 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	36 TB
Raw Storage *MAX*	36 TB
SSD Storage *MAX*	128 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✔
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✔
Limit Number of Backup Streams	✔
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✔
Internal Storage Capacity Alerting	✔
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✔
Native Metering *TOTAL #*	3
Network Authentication	LDAP	AD
Performance Threshold	✔
Server Prioritization	✔

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✔ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 928S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	72 TB
Raw Storage *MAX*	72 TB
SSD Storage *MAX*	128 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP | AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 938S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	96 TB
Raw Storage *MAX*	96 TB
SSD Storage *MAX*	256 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 944S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	122 TB
Raw Storage *MAX*	122 TB
SSD Storage *MAX*	480 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP | AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

Unitrends Recovery 946S

OVERALL RANK **RECOMMENDED**

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	3
Differing Data Retention Policies	✓
Double-blind Encryption	✓
Encryption Types *TOTAL #*	3
Fan-in/Fan-out Options *TOTAL #*	3
FIPS Certified	✓
Host App on VM	✓
Hypervisors Hosted *TOTAL #*	4
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	9
Replication Types *TOTAL #*	2
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	✓
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	8 / 2 / ●
4/8/16Gb FC Interfaces *MAX*	4 / 2 / 2
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	182 TB
Raw Storage *MAX*	182 TB
SSD Storage *MAX*	480 GB

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	6
Concurrent Backup Streams *MAX*	32
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	1
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	1
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	✓
Native Metering *TOTAL #*	3
Network Authentication	LDAP | AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	4
Warranty	1 Year

The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✓ **SUPPORTED**   ● **UNDETERMINED / UNSUPPORTED**

Veritas NetBackup 5240

OVERALL RANK **EXCELLENT**

CLOUD DATA
2017-18
DCIG
BUYER'S
GUIDE
PROTECTION APPLIANCE

CLOUD DATA PROTECTION

Bandwidth Throttling	✓
Cloud-based SaaS App Protection *TOTAL #*	●
Differing Data Retention Policies	✓
Double-blind Encryption	●
Encryption Types *TOTAL #*	2
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✓
Host App on VM	●
Hypervisors Hosted *TOTAL #*	●
Native WAN Acceleration	✓
Policy-based Auto-tiering	✓
Public Cloud Storage Targets *TOTAL #*	●
Replication Types *TOTAL #*	3
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	●
VM Instant Recovery	✓

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 8 / ●
4/8/16Gb FC Interfaces *MAX*	10 / 10 / ●
Cache *MAX*	256 GB
Controller Configurations *TOTAL #*	1
Raw Storage *MIN*	12 TB
Raw Storage *MAX*	300 TB
SSD Storage *MAX*	●

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	5
Concurrent Backup Streams *MAX*	192
Concurrent Backup/Replication	✓
Dedupe Acceleration Software *TOTAL #*	2
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✓
Limit Number of Backup Streams	✓
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✓
Internal Storage Capacity Alerting	✓
Mgmt. Consoles *TOTAL #*	3
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	●
Native Metering *TOTAL #*	5
Network Authentication	LDAP	AD
Performance Threshold	✓
Server Prioritization	✓

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	3 Years

NO FEEDBACK WAS RECEIVED FROM THE PROVIDER. ALL INFORMATION WAS SOLELY SOURCED BY DCIG.
The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in
the overall ranking, but which are not shown on this data sheet.

✓ SUPPORTED   ● UNDETERMINED / UNSUPPORTED

DCIG

Veritas NetBackup 5330

OVERALL RANK   EXCELLENT

CLOUD DATA PROTECTION

Bandwidth Throttling	✅
Cloud-based SaaS App Protection *TOTAL #*	⬤
Differing Data Retention Policies	✅
Double-blind Encryption	⬤
Encryption Types *TOTAL #*	2
Fan-in/Fan-out Options *TOTAL #*	5
FIPS Certified	✅
Host App on VM	⬤
Hypervisors Hosted *TOTAL #*	⬤
Native WAN Acceleration	✅
Policy-based Auto-tiering	✅
Public Cloud Storage Targets *TOTAL #*	⬤
Replication Types *TOTAL #*	3
VADP VMWare APIs *TOTAL #*	4
vCenter Instant Recovery Features *TOTAL #*	7
Virtual Appliance	⬤
VM Instant Recovery	✅

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*	4 / 10 / ⬤
4/8/16Gb FC Interfaces *MAX*	⬤ / 12 / ⬤
Cache *MAX*	384 GB
Controller Configurations *TOTAL #*	2
Raw Storage *MIN*	384 TB
Raw Storage *MAX*	1,104 TB
SSD Storage *MAX*	⬤

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*	5
Concurrent Backup Streams *MAX*	600
Concurrent Backup/Replication	✅
Dedupe Acceleration Software *TOTAL #*	2
Dedupe Implementation Types *TOTAL #*	3
Dedupe Methods *TOTAL #*	2
Dedupe Options *TOTAL #*	2
File Inclusion/Exclusion	✅
Limit Number of Backup Streams	✅
Restore Types	P2P, P2V, V2P, V2V
System Recovery Types *TOTAL #*	3

MANAGEMENT

Backup Trending	✅
Internal Storage Capacity Alerting	✅
Mgmt. Consoles *TOTAL #*	3
Mgmt. Interfaces *TOTAL #*	9
Multi-tenancy Isolation	⬤
Native Metering *TOTAL #*	5
Network Authentication	LDAP	AD
Performance Threshold	✅
Server Prioritization	✅

SUPPORT

Support Availability	24X7X365
Support Methods *TOTAL #*	3
Warranty	3 Years

NO FEEDBACK WAS RECEIVED FROM THE PROVIDER. ALL INFORMATION WAS SOLELY SOURCED BY DCIG.
The DCIG Competitive Intelligence Portal contains additional data elements that are reflected in the overall ranking, but which are not shown on this data sheet.

✅ SUPPORTED   ⬤ UNDETERMINED / UNSUPPORTED

APPENDICES

DCIG
2017-18 CLOUD DATA PROTECTION APPLIANCE BUYER'S GUIDE
The Insider's Guide to Evaluating Cloud Data Protection Appliances

Appendix A—Definitions, Explanations and Terminology

Definitions, Explanations and Terminology

This section contains brief definitions and/or explanations of the terms used and assumptions made when developing the data sheets found in the *DCIG 2017-18 Cloud Data Protection Appliance Buyer's Guide.*

Cloud Data Protection

Bandwidth Throttling

Indicates if the product can limit the amount of data being replicated at one time.

Cloud-based SaaS App Protection *TOTAL #*

Total number of cloud-based software-as-a-service applications such as Google G Suite, Microsoft Office 365, and others for which the product can perform cloud-to-cloud backup. For a detailed list of exactly which cloud-based SaaS applications that the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Differing Data Retention Policies

Indicates if data retention policies for replicated data can be set differently within the product than for the original data.

Double-blind Encryption

The product encrypts data on-premise before sending it to the cloud provider.

Encryption Types *TOTAL #*

Lists the number of ways in which data may be encrypted. Possible ways in which data may be encrypted is when it is transmitted to/ from the cloud provider, and when it is stored on-premise or off-site in the cloud. For a detailed list of exactly which encryption types that the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Fan-in/Fan-out Options *TOTAL #*

If the product supports replication, this indicates the total number of options the product offers to configure data replication (1:1, 1:N, 1:N:N, N:1, or N:N). For a detailed list of exactly which fan-in/fan-out replication options that the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

FIPS Certified

Indicates whether the product is Federal Information Processing Standard (FIPS) certified.

Host App on VM

The product may host an application on a VM running on the application. This VM would most likely be used to host application for test or development purposes.

Hypervisors Hosted *TOTAL #*

Indicates the total different number of hypervisors that can run on the product. Possible hypervisors it can support include Citrix XenServer, Linux KVM, Microsoft HyperV, VMware ESX/ESXi, and Oracle VM. For a detailed list of exactly of which hypervisors can run on the product, please access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Native WAN Acceleration

Indicates whether the product natively provides WAN acceleration to the cloud.

Policy-based Auto-tiering

Auto-tiers data across storage located both locally and in the cloud based on policy.

Public Cloud Storage Targets *TOTAL #*

Lists the total number of public cloud storage targets supported by the product. For a detailed list of exactly which public cloud storage providers the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Replication Types *TOTAL #*

Lists the total number of replication types that the product supports. Replication types include continuous replication, periodic or scheduled replication, and synchronous replication. For a detailed list of exactly which replication types that the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

VADP VMware APIs *TOTAL #*

The vStorage Application Data Protection (VADP) APIs help to better manage and expedite the protection of virtual machines. Some of VADP's features include full and incremental Changed Block Tracking (CBT), and logical volume management (LVM). Indicates the total number of application programming interfaces (APIs).

For a detailed list of exactly which VADP APIs the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

vCenter Instant Recovery Features *TOTAL #*

Indicates the model's vCenter instant recovery features. For a detailed list of exactly of which vCenter instant recovery features that the product supports, please access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Virtual Appliance

Indicates if the product is available as a virtual appliance.

VM Instant Recovery

Indicates if the product can instantly recover a virtual machine (VM) on the appliance after a VM fails. The VM runs on the appliance while the application is restored to its production location.

BACKUP & RECOVERY

Bare Metal Recovery *TOTAL #*

Indicates the total number of operating systems for which the product can do a bare metal restore. For a detailed list of the operating systems for which the product supports bare metal restores, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

BMR Options *TOTAL #*

Number of different ways in which the product provides to do bare metal recoveries (BMR). Options include to similar hardware, to dissimilar hardware, and to a VM. For a detailed list of which BMR options the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Concurrent Backup Streams *MAX*

Indicates the maximum number of data streams that can be backed up by the appliance simultaneously.

Concurrent Backup/Replication *MAX #*

Indicates whether the product can perform backups while concurrently replicating to another system.

Dedupe Acceleration Software *TOTAL #*

Indicates the number of client-side deduplication software options that the product supports. Examples of software supported include DD Boost, OST, Rapid Data Access, Rapid NFS/Rapid CIFS, etc. For a detailed list of the client-side deduplication acceleration software options the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Dedupe Implementation Types *TOTAL #*

Indicates the total number of deduplication implementation types (source, target, media server, or a combination of these) that the product support. For a detailed list of which deduplication implementation types the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Dedupe Methods *TOTAL #*

Indicates the number of ways in which the product deduplicates data. It may deduplicate data inline, post-process, or both. For a detailed list of which deduplication methods the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Dedupe Options *TOTAL #*

Indicates the number of ways in which the product supports deduplication. It may offer block level deduplication, file level deduplication or both. For a detailed list of which deduplication options the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

File Inclusion/Exclusion

Indicates whether the product gives administrators the ability to include or exclude files to backup.

Limit Number of Backup Streams

Restricts the number of backup streams an appliance can accept at one time to improve performance of the jobs already running.

Restore Types

Lists what types of restores the product can perform. Options are V2V (Virtual to Virtual), V2P (Virtual to Physical), P2V (Physical to Virtual), and P2P (Physical to Physical).

MANAGEMENT

Backup Trending

Indicates whether a physical or virtual machine backs up more data over time.

Internal Storage Capacity Alerting

Sends out notifications that the product is approaching its maximum available storage capacity.

Mgmt. Consoles *TOTAL #*

Lists the total number of third party management console interfaces that can manage this product. Examples of management console options include: Microsoft Management Console (MMC), VMware vCenter, and others. For a detailed list of exactly what management

consoles support this product, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Mgmt. Interface(s) *TOTAL #*

Lists the total number of ways to manage the product, to include CLI (command line interface), Client Application, Web GUI, and others. For a detailed list of exactly which management interfaces the product supports, access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Multi-tenancy Isolation

Indicates whether multiple users (tenants) can securely use and share the product's resources while keeping each tenant's data isolated and invisible from other tenants.

Native Metering *TOTAL #*

Indicates the total number of methods supported by the product to natively meter real-time statistics (CPU, network, and storage utilization), track historical usage, and implement charge-back to users, business units or projects. For a detailed list of exactly which metering capabilities this product supports, please access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Network Authentication

Indicates which network authentication protocols are supported by the product.

Performance Threshold

Indicates if the product generates alerts when specified performance thresholds are breached.

Server Prioritization

Indicates whether the product prioritizes server backups based on the length of time since the server successfully completed its last backup.

HARDWARE

1/10/40Gb Ethernet Interfaces *MAX*

If supported, indicates the maximum number of 1Gb, 10Gb and 40Gb Ethernet storage networking ports available on the product.

4/8/16Gb FC Interfaces *MAX)*

If supported, indicates the maximum number of 4Gb, 8Gb and 16Gb Fibre Channel storage networking ports available on the product.

Cache *MAX*

Lists the maximum amount of cache capacity the model natively supports.

Controller Configurations *TOTAL #*

Indicates the total number of controller configurations supported by the product. Controller configurations can include controllers in Active-Active configurations, Active-Passive configurations, Dual Active configurations, Scale-out, and Single Controller. For a precise list of exactly which controller configurations the product supports, please access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Raw Storage *MIN*

Lists the minimum amount of raw storage capacity the model natively supports.

Raw Storage *MAX*

Lists the maximum amount of raw storage capacity the model natively supports.

SSD Storage *MAX*

Lists the maximum amount of raw SSD storage capacity the model natively supports.

Support

Support Availability

Indicates the hours of support availability.

Support Methods *TOTAL #*

Indicates the total number of methods in which IT organizations can access support from the provider. For a detailed list of exactly which methods are supported, please access the DCIG Competitive Intelligence Portal at **http://portal.dcig.com**.

Warranty

The standard warranty included with the product.

Vendor Contact Information

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